

WHAT IS CLAIMED IS:

1. A moving apparatus, comprising:

a flying body, including

a wing portion for fluttering in a space in which a fluid exists,

a driving portion for performing a down stroke in which said wing

5 portion is moved downward from above and an up stroke in which said wing portion is moved upward from below, and

portion is mounted; wherein

by time average for the series of said down stroke and said up stroke,

10 vertically upward force received by said wing portion from said fluid is larger than gravity acting on said flying body.

2. The moving apparatus according to claim 1, wherein

volume of said space in which said wing moves in said down stroke is larger than the volume of said space in which said wing moves in said up stroke.

3. The moving apparatus according to claim 1, wherein

said flying body is used as moving means for performing a prescribed operation indoors.

4. The moving apparatus according to claim 1, wherein

said flying body is used as moving means for performing a prescribed operation outdoors.

5. The moving apparatus according to claim 1, wherein

said wing portion has

a wing body portion, and

a wing shaft portion supporting said wing body portion; and

5 said driving portion changes a torsion angle formed by a tip end portion of said wing body portion and a prescribed phantom reference plane,

by driving said wing shaft portion.

6. The moving apparatus according to claim 5, wherein  
said driving portion makes said torsion angle in said down stroke  
different from said torsion angle in said up stroke.

7. The moving apparatus according to claim 5, wherein  
said driving portion changes with time said torsion angle.

8. The moving apparatus according to claim 5, wherein  
said wing shaft portion includes one wing shaft portion and the other  
wing shaft portion;

5        said wing body portion includes a film portion formed spreading  
across said one wing shaft portion and said the other shaft portion; and  
          said driving portion drives said one shaft portion and said the other  
          shaft portion separately.

9. The moving apparatus according to claim 5, wherein  
said wing shaft portion reciprocates on a phantom plane with said  
driving portion serving as a fulcrum;  
          said main body portion extends along one direction; and  
5        an elevation formed by the direction of extension of said body portion  
          and said phantom plane is variable.

10. The moving apparatus according to claim 1, wherein  
said wing portion has  
a main shaft portion, and  
a wing body portion formed in a direction approximately orthogonal  
5        to a direction of extension of said main shaft portion, from said main shaft  
portion; and  
          said driving portion changes a torsion angle formed by a phantom  
          plane in contact with said wing body portion and a prescribed phantom  
          reference plane including said main shaft portion, by driving said main

shaft portion.

11. The moving apparatus according to claim 10, wherein  
said driving portion includes an actuator having at least three  
degrees of freedom.

12. The moving apparatus according to claim 10, wherein  
said wing portion is formed on one side and the other side of  
approximately the center of said body portion; and  
said driving portion drives said wing portion formed on said one side  
and said wing portion formed on said the other side separately.

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13. The moving apparatus according to claim 1, comprising  
a sensor portion for grasping environmental condition.

14. The moving apparatus according to claim 1, comprising  
a memory portion for storing information.

15. The moving apparatus according to claim 1, comprising  
a communication portion for transmitting and receiving information.

16. The moving apparatus according to claim 8, wherein  
said one wing shaft portion and said the other shaft portion are  
formed such that a space therebetween is enlarged toward tip ends of said  
one wing shaft portion and said the other said shaft portion.

17. The moving apparatus according to claim 8, wherein  
said one wing shaft portion and said the other wing shaft portion are  
pivotable about the respective axes of said one wing shaft portion and said  
the other wing shaft portion.

18. The moving apparatus according to claim 1, wherein  
a target manner of movement is realized by time-sequentially combining

basic operations in accordance with basic operations pattern data.

19. The moving apparatus according to claim 18, comprising  
storing means for storing combination of said basic operations  
pattern data and driving manner data related to the manner of driving said  
driving portion realizing said basic operations pattern data.

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